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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,340	01/30/2002	Minho Sohn	052640-5022	6132

9629 7590 05/26/2004

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EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 05/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/058,340	Applicant(s) SOHN ET AL.	
	Examiner Rodney G. McDonald	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 19-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-3, 6, 8, 10-14 and 17 is/are allowed.
- 6) ☒ Claim(s) 4, 5, 7, 9, 15, 16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8-29-03</u> . | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to a cesium vapor emitter, classified in class 222, subclass 3.
- II. Claims 10-18, drawn to a sputtering device, classified in class 204, subclass 298.07.
- III. Claims 19-30, drawn to a method of fabricating a reservoir and fabricating a pellet for the reservoir, classified in class 419, subclass 1+.
- IV. Claims 31-33, drawn to a slurry composition, classified in class 252, subclass 572.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions the cesium vapor emitter can be used as a vapor emitter for a CVD process instead of a sputtering process.

Inventions I and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process

(MPEP § 806.05(f)). In the instant case the product can be made by other methods such using pressing and heating.

Inventions I and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions can be used separately and have different functions. The slurry is used for forming composites and the reservoir is used for providing gases.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects. The sputtering apparatus is used for forming films and the method forms the reservoir.

Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). The slurry is utilized for forming a composite and the apparatus is utilized for sputtering.

Inventions III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). The slurry is utilized for forming a composite and the method is utilized to form a reservoir.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mary Jane Boswell on April 8, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9. In the conversation Applicant's representative argued that claims 10-18 should be examined together with claims 1-9. The Examiner was persuaded and agrees to examine claims 1-18.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

Claims 4, 5, 7, 9, 15, 16 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is indefinite because "the cesium pellet" lacks antecedent basis.

Claim 7, line 3, is indefinite because of the word "types". It is suggested to replace the word "types" with the word "shapes".

Claim 9, line 2, "insert" is unclear. It is suggested to replace "insert" with "inert".

Claim 9, line 2, "close" lacks antecedent basis. It is suggested to delete this word.

Claim 15, line 2, "the cesium pellet" lacks antecedent basis.

Claim 16, line 3, it is suggested to replace "types" with "shapes".

Claim 18, line 2, "insert" is unclear. It is suggested to replace "insert" with "inert".

***Allowable Subject Matter***

Claims 1-3, 6, 8, 10-14 and 17 are allowed.

Claims 4, 5, 7, 9, 15, 16 and 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-9 are indicated as being allowable over the prior art of record because the prior art of record does not teach the claimed subject matter which includes the cesium reservoir placed in the chamber, wherein the cesium reservoir is filled with a cesium slurry and a plug located between the cesium slurry and the channel, thereby emitting the cesium vapor from the cesium slurry through the channel; and a stopper securing the cesium reservoir in the chamber, so that the cesium vapor is emitted through the channel.

Claims 10-18 are indicated as being allowable over the prior art of record because the prior art of record does not teach the claimed subject matter including the sputtering source having the cesium vapor emitter including a housing having at least one chamber therein and at least one channel, wherein the channel has a size wide enough to introduce a desired amount of the cesium vapor and is located in close proximity to the sputter target and a cesium reservoir placed in the chamber, wherein the cesium reservoir is filled with a cesium slurry and a plug located between the cesium slurry and the channel, and a stopper securing the cesium reservoir in the chamber, so that the cesium vapor is emitted through the channel.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al. (U.S. Pat. 6,383,345) teach sputter deposition utilizing cesium but does not teach Applicant's system for delivering cesium to the sputter chamber.

Seidl (U.S. Pat. 4,783,595) teach a cesium delivery system for a chamber but does not teach Applicant's claimed subject matter including among other things the reservoir and cesium slurry.

Grant et al. (U.S. Pat. 2,991,389) teach a cesium vapor oven for delivering cesium vapor to a chamber but does not teach Applicant's claimed subject matter including among other things the reservoir and cesium slurry.

Ikebe et al. (U.S. Pat. 4,774,433) teach a cesium vapor delivery means for delivering cesium vapor but does not teach Applicant's claimed subject matter including among other things the reservoir and cesium slurry.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney G. McDonald  
Primary Examiner  
Art Unit 1753

RM  
May 24, 2004